

REMARKS

Applicants respectfully request the Examiner to reconsider the present application in view of the foregoing amendments to the claims and present specification and the following remarks.

Status of the Claims

In the present Amendment, claims 1, 2, 5-8, 22 and 25-27 have been amended. Also, claims 28-30 have been added. Further, claims 11, 12, 13, 16, 17, 19-22 and 24 stand withdrawn from consideration. Thus, claims 1-30 are pending in the present application.

No new matter has been added by way of these amendments, because each amendment is supported by the present specification and/or is editorial in nature. For example, the amendments to claims 1 and 2 merely reiterate existing claim language in a clearer way (e.g., “if required” changed to “an optional ingredient” in claim 1). For claim 1, see also page 5, lines 22-23 of the specification. The amendments to claims 5-8, 22 and 25-27 are also clearly clarifying in nature and not narrowing in scope. By deleting/amending these terms in order to clarify the claimed invention (e.g., adding “an” before “air bag”), Applicants in no way are conceding any limitations with respect to the interpretation of the claims under the Doctrine of Equivalents.

Also, no new matter has been added with the addition of claims 28-30. Support for the new claims is found in the present specification at least at page 5, lines 12 and 14, page 8, last paragraph and in the original claims.

The amendment to the present specification corrects a typographical error and does not add new matter.

Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Withdrawn Subject Matter

Applicants note paragraphs 1-2 at page 2 of the Office Action. Applicants respectfully submit that should allowable subject matter be found, other subject matter/species should be considered and rejoined with the allowable subject matter. This is because when a gas generant composition containing the melamine cyanurate (MC) as a fuel is found novel and unobvious, the same gas generant composition having any additional ingredient should also be novel and unobvious, and thus found allowable (e.g., withdrawn claim 19 reciting guanidine nitrate as an additional component (A); claim 12 reciting melamine as additional component (A)).

Claim Objections

Claim 26 stands objected to as stated in paragraph 3 of the Office Action. The cited typographical error has been corrected. Thus, withdrawal of this objection is respectfully requested.

Issues under 35 U.S.C. § 102(b)

Claims 1-4, 6, 8-10, 23 and 25-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zeuner '537 (U.S. Patent No. 6,132,537; see paragraphs 4-5 of the Office Action).

Also, claims 1-4, 6-10, 23 and 25-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Scheffee *et al.* '571 (U.S. Patent No. 5,861,571; see paragraph 6 of the Office Action).

Further, claims 1-4 and 7-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Blount '515 (U.S. Patent No. 6,054,515; see paragraph 7 of the Office Action).

Applicants respectfully traverse, and reconsideration and withdrawal of these rejections are respectfully requested.

Distinctions over Zeuner '537

The Examiner refers Applicants to column 2, lines 1-20 and 53-56 and claim 1 of the cited Zeuner '537 reference. However, Zeuner '537 discloses cyanuric acid and melamine separately as shown at column 2, lines 3 and 46, respectively. There is no melamine cyanurate, which is a salt of melamine and cyanuric acid, described in Zeuner '537. Thus, this rejection has been overcome since, even recently, the Federal Circuit reiterated what the test for anticipation involves: "The single reference must describe and enable the claimed invention, including all claim limitations, with sufficient clarity and detail to establish that the subject matter already existed in the prior art and that its existence was recognized by persons of ordinary skill in the field of the invention." See *Elan Pharmaceuticals Inc. v. Mayo Foundation for Medical Education and Research*, 64 USPQ2d 1292, 1296 (Fed. Cir. 2002) (citing *Crown Operations International, Ltd. v. Solutia Inc.*, 289 F.3d 1367, 1375, 62 USPQ2d 1917, 1921 (Fed. Cir. 2002)). Here, there is no sufficient clarity and detail for one of skill in the art to arrive at the instantly claimed melamine cyanurate based on the Zeuner '537 disclosure. Though Zeuner '537 refers to

salts and derivatives, this is with respect to many possible ingredients leading to many possible combinations thereof. In this regard, anticipation is not established if it is necessary to pick, choose and combine various portions of the disclosure, not directly related to each other by teachings of reference, in order to find that anticipation claim reads on that reference. Thus, the rejection in view of Zeuner '537 has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

Distinctions over Scheffee *et al.* '571

The Examiner refers Applicants to the melamine, cyanuric acid derivative, cellulose binders and hydroxides disclosed at column 4 of Scheffee '571. Applicants do note column 4, line 30 of Scheffee '571 which discloses fuels. The Examiner also refers to "ammonium perchlorate" of Scheffee '571, which appears at column 3, line 39 of Scheffee '571. However, these parts of Scheffee '571 do not equate to disclosure of the instantly claimed MC. Also, the reference to "and the like" at line 30 of column 4 of Scheffee '571 refers to other like ingredients of the list given at column 4, starting at line 27, and not to the instantly claimed MC salt.

Accordingly, because "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," the cited Scheffee '571 reference cannot be a basis for a rejection under § 102(b). *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, because of the lack of disclosure of all features as instantly claimed, the rejection in view of Scheffee '571 is overcome. Reconsideration and withdrawal are respectfully requested.

Distinctions over Blount '515

Regarding paragraph 7 of the Office Action and the cited Blount '515 reference, the Examiner refers to claim 5 and columns 5 and 7 of this reference. Applicants do note column 18, line 47 (or claim 5), but MC is disclosed as a "filler." It is noted that Blount '515 discloses the fillers as optional components, "Component (F) is utilized in the amount of 0 to 400 parts by weight." (column 2, lines 34-35). Many fillers are disclosed in Blount '515 (column 4, line 46 to column 5, line 4). However, MC is never used in any of the Examples as a filler, much less as a fuel. Further, Applicants note the instantly claimed amount for fuel component (a). Therefore, Blount '515 does not teach or suggest the claimed invention.

Also, Applicants respectfully refer the Examiner to how the melamine cyanurate is presently claimed as a "fuel" and not as a "filler". As known in the art, both a fuel and filler will burn and generate gas. However, a fuel does not work as a flame retardant and only burns. Therefore, Blount '515 fails to disclose the instantly claimed component (a) of the MC fuel and this rejection has been overcome. *Elan Pharmaceuticals; Verdegaal Bros.; supra.*

Reconsideration and withdrawal of this rejection are respectfully requested.

Issues under 35 U.S.C. § 103(a)

Claims 7 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zeuner '537 as applied in paragraph 5 of the Office Action, in view of Zhou '369 (U.S. Patent No. 6,468,369) or Matsuda '767 (U.S. Patent No. 5,780,767) (see paragraph 8 of the Office Action).

Additionally, claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zeuner '537 in view of Zhou '369 or Matsuda '767 as applied in paragraph 8 of the Office Action, and further in view of Hinshaw *et al.* '703 (U.S. Patent No. 5,970,703) (see paragraph 9 of the Office Action).

Further, claims 1-4, 6-10, 14, 23 and 25-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu '562 (U.S. Patent No. 6,505,562) in view of Taylor *et al.* '147 (U.S. Patent No. 6,096,147) (see paragraph 10 of the Office Action).

In addition, claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu '562 in view of Taylor *et al.* '147 as applied above and further in view of Hinshaw *et al.* '703 (see paragraph 11 of the Office Action).

Also, claims 1-4, 6-10, 14, 23 and 25-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Taylor *et al.* '147 in view of Khandhadia *et al.* '505 (U.S. Patent No. 6,210,505) (see paragraph 12 of the Office Action).

Finally, claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Taylor *et al.* '147 in view of Khandhadia *et al.* '505 as applied above, and further in view of Hinshaw *et al.* '703 (see paragraph 13 of the Office Action).

Applicants respectfully traverse. Overall, Applicants do not concede that a *prima facie* case of obviousness has been established with respect to any of the rejections.

Distinctions over Zeuner '537 and Zhou '369 or Matsuda '767 (paragraph 8 of the Office Action) and Zeuner '537 and Zhou '369 or Matsuda '767 and further in view of Hinshaw *et al.* '703 (paragraph 9 of the Office Action)

For both of these rejections, Zeuner '537 is the cited primary reference. As previously stated above, Zeuner '537 fails to disclose melamine cyanurate and only discloses cyanuric acid and melamine separately as shown at column 2, lines 3 and 46, respectively. The other secondary references are cited to disclose binders (e.g., CMCNa in Zhou '369 or Matsuda '767) and coolants (e.g., ALOH in Hinshaw '703). Thus, the secondary references do not account for the deficiencies of the primary reference. Accordingly, these rejections have been overcome since there is no disclosure of all claimed features in the cited combinations of references. U.S. case law squarely holds that a proper obviousness inquiry requires consideration of three factors: (1) the prior art reference (or references when combined) must teach or suggest all the claim limitations; (2) whether or not the prior art would have taught, motivated, or suggested to those of ordinary skill in the art that they should make the claimed invention (or practice the invention in case of a claimed method or process); and (3) whether the prior art establishes that in making the claimed invention (or practicing the invention in case of a claimed method or process), there would have been a reasonable expectation of success. *See In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Here, not even the initial requirement of disclosure of all claimed features has been satisfied. Therefore, reconsideration and withdrawal of these rejections are respectfully requested.

Applicants also note that the requisite motivation and reasonable expectation of success are lacking.

Regarding the necessary level of motivation, the primary reference of Zeuner '537 discloses that using more than 50% basic copper nitrate (BCN) in the oxidizer mixture "is disadvantageous" (column 3, lines 26-32). In this regard, any cited reference used for a rejection

under 35 U.S.C. § 103(a) must be considered in its entirety, *i.e.*, as a whole, including those portions that would lead away from a claimed invention. *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In other words, the Zeuner '537 reference must be read in its entirety, including the teaching away that using too much BCN would be have disadvantages (e.g., increase in proportion of nitrous gases in gas mixture) when employed in an oxidizer composition. Disputed claims 14 and 18 both recite BCN, wherein claim 18 recites such "disadvantageous" amounts. Applicants also refer the Examiner to Example 1 in Table 1 at page 14 of the present specification that uses 100% BCN and depicts how the present invention achieves unexpected results. Thus, one of skill in the art would lack the requisite motivation to achieve what is instantly claimed based on the Zeuner '537 disclosure.

Regarding the requisite reasonable expectation of success, Applicants note that Zeuner '537 does not disclose MC. In fact, Applicants note that the primary reference does not recognize the instantly claimed component (a) given the disclosure at column 2, lines 45-53 of Zeuner '537. In this regard, an invention is merely "obvious to try" if the cited reference gives either no indication of which parameters are critical or no direction as to which of many possible choices is likely to be successful. *See Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843, 1845 (Fed. Cir. 1989). Accordingly, an improper "obvious to try" rationale is being used by combining the cited references. Thus, the requisite reasonable expectation of success is also lacking for these two rejections.

Accordingly, these rejections have been overcome since not all requirements for a *prima facie* case of obviousness have been satisfied. Withdrawal of these rejections are respectfully requested.

Distinctions over Wu '562 and Taylor *et al.* '147 (paragraph 10 of the Office Action)

The rejection of claims 1-4, 6-10, 14, 23 and 25-26 is improper. The cited Wu '562 reference discloses a melamine polymer or resin (see, e.g., column 4, lines 13+), but this does not equate to disclosure of the instantly claimed melamine cyanurate monomer. Taylor '147 is cited for its disclosure of BCN. Accordingly, this rejection has been instantly overcome as the cited combination of references does not disclose all instantly claimed features (e.g., the MC monomer). *In re Vaeck; supra*. Withdrawal of this rejection is respectfully requested.

Further, the requisite motivation is lacking. By using MC, the present invention unexpectedly achieves superior ignition and combustion properties. However, when using the melamine polymer of Wu '562, inferior ignition and combustion are the results. In fact, when combining the melamine polymer of Wu '562 with BCN, even worse results are achieved. Applicants note that it will take several seconds to several tens of seconds for a resin that includes a melamine compound or a phosphoric ester to start burning. This is contrary to the present invention that will burn out for a relatively short time (e.g., several to 150 milliseconds to generate gas in amount enough to inflate the air bag). Thus, the combination of the melamine polymer of Wu '562 with BCN will not be useful for an air bag inflator in which a sufficient gas is required in several milliseconds to inflate an air bag and restrain the driver or passenger. In this regard, a cited reference must suggest the desirability of the modification. *In re Brouwer*, 37

USPQ2d 1663, 1666 (Fed. Cir. 1995). The cited Wu '562 reference does not suggest any advantage to be gained by making the Examiner's proposed combination. Thus, even initially referring to Wu '562 is improper as this reference describes a melamine polymer and not the monomer salt.

The reference to column 5, lines 1-30 of Taylor '147 is also improper, as is the combination of this reference with Wu '562. The cited Taylor '147 reference does describe BCN as well as carboxymethyl cellulose (CMC) and other ingredients at column 5, lines 1-30. However, carboxymethyl cellulose is not only insoluble in water, it is different from sodium carboxymethyl cellulose in the type of material and properties thereof. Applicants note CMCNa is cited in Wu '562, wherein CMC is cited in Taylor '147. As opposed to CMC, CMCNa is inherently soluble in water. Thus, Applicants respectfully traverse the conclusions in the Office Action at page 5, lines 1-7, as Taylor '147 is being improperly used and combined with the Wu '562 disclosure. The two references are even inconsistent with one another (CMC v. CMCNa). Even if the disclosures could be combined (which Applicants argue is not proper), employing the BCN and insoluble CMC of Taylor '147 into the Wu '562 melamine polymer-containing composition would result in different composition than what is instantly claimed. Such a proposed composition would not even include the MC monomer since the primary reference does not even disclose the monomer. Therefore, the requisite reasonable expectation of success is lacking given the different properties between the cited carboxymethyl cellulose and sodium carboxymethyl cellulose, and how Wu '562 uses a different melamine compound. *In re Vaeck; supra.*

Accordingly, based on the above, withdrawal of this rejection in view of the combination of Wu '562 and Taylor '147 is respectfully requested.

Distinctions over Wu '562, Taylor '147 and Hinshaw '703 (paragraph 11 of the Office Action)

Applicants note that above arguments (as applicable against the rejection of Wu '562 plus Taylor '147) apply to this rejection as well. Citing Hinshaw '703 does not make the combination of Wu '562 and Taylor '147 any more proper. Hinshaw '703 is being used to merely disclose AIOH as a coolant (see the Office Action at page 5, lines 11-12). But as explained above, the cited primary reference of Wu '562 fails to disclose the instantly claimed melamine cyanurate, and the secondary reference of Taylor '147 uses insoluble carboxymethyl cellulose. Accordingly, this rejection has been instantly overcome as the cited combination of these three references still does not disclose all instantly claimed features, and the requisite motivation and reasonable expectation of success are lacking for the same reasons cited above. *In re Vaeck; supra*. Withdrawal of this rejection is respectfully requested.

Distinctions over Taylor '147 and Khandhadia '505 (paragraph 12 of the Office Action) and over Taylor '147, Khandhadia '505 and Hinshaw '703 (paragraph 13 of the Office Action)

The Office Action acknowledges that Taylor '147, *inter alia*, does not disclose the instantly claimed component (a) (see the Office Action at page 5, last three lines). However, Applicants note MC is not specifically disclosed in the cited secondary references as well. For example, column 4, line 55 of Khandhadia '505 refers to "melamine" and not melamine cyanurate. As another example, Hinshaw '703 is cited for merely disclosing a coolant (see the

Office Action at page 6, lines 11-12). Accordingly, a *prima facie* case of obviousness is not established with respect to either rejection as there is no disclosure of all claimed features. Thus, these rejections have been overcome for these reasons alone.

Also regarding how the primary reference does not disclose component (a), this is a major deficiency of the primary reference as the present invention is directed to such a fuel component. Applicants also traverse the reason for citing or combining the disclosure of the secondary reference(s) includes, e.g., "Taylor discloses that a variety of fuel materials can be used" (see page 6, lines 3-7 of the Office Action). This is an improper reason for combining these references since: "Obviousness requires one of ordinary skill in the art have a reasonable expectation of success as to the invention—'obvious to try' and 'absolute predictability' are incorrect standards." *Velandier v. Garner*, 68 USPQ2d 1769, 1784 (Fed. Cir. 2003) (citing *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673 (Fed. Cir. 1988)). Here, it is clear that Taylor '147 does not recognize any advantages in using a specific fuel, especially that which is instantly claimed.

Further, using the disclosure at column 5, lines 18-25 of Taylor '147 as a basis for citing Khandhadia '505 and/or Hinshaw '703 is clearly an improper "obvious to try" rationale. Such a rationale means any and all types of publications and patents disclosing a fuel for a gas generating composition could be cited and combined with the Taylor '147 disclosure until the present invention is eventually achieved. It is not even clear as to why one of ordinary skill in the art would pick any particular fuel in, e.g., Khandhadia '505 as this reference itself does not recognize any specific advantages for any specific fuel. Regarding Khandhadia '505, it appears that the Examiner is referring to column 4, lines 36-55. But there is simply a large laundry list of

possible fuel components at this part of the Khandhadia '505 specification, which further supports Applicants' position that an improper obvious to try rationale is being used for either rejection. Khandhadia '505 certainly does not recognize any advantage in using a particular fuel, especially with regard to what is instantly claimed.

Thus, the requirements for a *prima facie* case of obviousness have not been satisfied for either rejection as stated in paragraphs 12-13 of the Office Action. Withdrawal of both rejections is respectfully requested.

Unexpected Results

Applicants respectfully submit that the present invention has achieved unexpected results, whereby such results rebut any asserted *prima facie* case of obviousness (whether based on any reference cited herein or combinations thereof). See *In re Corkill*, 711 F.2d 1496, 226 USPQ (BNA) 1005 (Fed. Cir. 1985); see also *In re Papesch*, 315 F.2d 381, 137 USPQ (BNA) 43 (CCPA 1963); *In re Wiechert*, 370 F.2d 927, 152 USPQ (BNA) 247 (CCPA 1967). As stated in M.P.E.P. § 2144.09 (see section entitled "*Prima Facie* Case Rebuttable By Evidence of Superior or Unexpected Results"), any rejection under 35 U.S.C. § 103(a) may be rebutted by a sufficient showing of unexpected results for the present invention.

The present invention is directed to a gas generating composition comprising at least melamine cyanurate or a mixture of melamine cyanurate and a nitrogen-containing organic compound as a fuel component (a). By using melamine cyanurate as a fuel, the present invention unexpectedly achieves superior ignition and combustion properties. More specifically, the presently claimed composition has the unexpected advantages of (1) the content of ammonium

group decreases by incorporating the cyanurate group and eventually a generated amount of ammonia decreases upon combustion; and (2) using MC is safe wherein isocyanuric acid is known to cause cancer. The use of MC thus leads to safer manufacturing of the gas generant products. Even further, by using component (b) as well (e.g., BCN), the present invention achieves a low amount of heat from combustion as well as a cleaner gas. These advantages by using MC are not described or suggested in any of the cited references.

Reconsideration and withdrawal of all § 103(a) rejections are respectfully requested as unexpected results for the present invention rebut any asserted *prima facie* case of obviousness.

Issues under 35 U.S.C. § 112, Second Paragraph

Claims 1-4, 6-10, 14, 15, 18, 23 and 25-27 stand rejected under 35 U.S.C. § 112, second paragraph as stated in paragraphs 14-15 of the Office Action. Applicants respectfully traverse.

The disputed claim language of “if required” in claims 1 and 2 has been removed. Thus, this rejection is rendered moot and/or has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case.

Application No. 10/633,645

Docket No.: 0425-1067P

Art Unit 1755

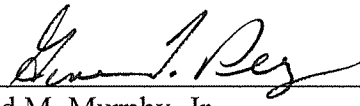
Reply to Office Action of August 8, 2006

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Eugene T. Perez (Reg. No. 48,501) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: NOV 06 2006

Respectfully submitted,

By  #48,501
for Gerald M. Murphy, Jr.
Registration No.: 28,977
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road, Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant